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# Developing a Sense of Place with Locative Media: An “Underview Effect”

Chris Speed

In this article, I explore the limitations maps place on our experience of a sense of place. The use of maps and satellite technologies is a core component across emerging locative media platforms. Although Global Positioning Systems (GPS) are becoming increasingly accurate at identifying where somebody is in space, as I demonstrate below, the use of abstract maps as a representational medium obscures the potential of the technology to provide a sense of place—in particular global place. I use Frank White’s “Overview Effect” concept, the “worldview” that is recalled by astronauts after seeing the planet Earth from space as a metaphor for understanding the sense of place in a larger global, social and geographical context. By stepping through a series of theoretical frameworks—Heidegger’s loss of dwelling, Lefebvre’s model for “spaces of representation,” Latour’s social networks and returning and Casey’s sense of place—I explore a problematic in how place is represented and interpreted through the use of abstract maps and charts. This leads to my argument that if our use of locative media is to help us develop some sensitivity toward place, we must understand the implications of using models of Cartesian time and space that split our experience of the world into quantitative components.

The form of recovery I propose places an emphasis on the social networking properties of contemporary mobile phones as an emollient for the perceived split between space and time. These devices allow people to connect with one another in a fashion that supports a sense of place. I conclude with examples from my own work with colleagues and offer a methodology for the use of locative media that situates people within a social and geographical network and sustains a wider and potentially global sense of place—one that is experienced from the ground.

## THE OVERVIEW EFFECT

*The Overview Effect is the experience of seeing the Earth from a distance, especially from orbit or the Moon, and realizing the inherent unity and oneness of everything on the planet. The Effect represents a shift in perception wherein the viewer moves*

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*from identification with parts of the Earth to identification with the whole system [1].*

—Frank White

White’s Overview Effect is best understood through narratives from astronauts who have seen the earth from space, such as Eugene Cernan:

Without question, when you are in Earth orbit, you get a new perspective, but you don’t have time to get philosophical about it. . . . When you leave Earth orbit, all those coastlines and rivers you see in orbit become oceans and continents. You can see from pole to pole and ocean to ocean without even turning your head [2].

Rusty Schweickart speaks of a similar experience during a spacewalk outside his Apollo 9 vehicle back on 6 March 1969:

When you go around the Earth in an hour and a half, you begin to recognize that your identity is with that whole thing. That makes a change . . . it comes through to you so powerfully that you’re the sensing element for man [3].

White’s Overview Effect is useful in identifying the potential that contemporary locative media technologies offer in placing users in a social, political and environmental frame. Maps of all kinds have mediated how we represent place and space from above, and people have been taught to use them as conceptual indices that pictorially describe a wide variety of subjects. Early on in his book, White demonstrates that space technologies are not required to attain an Overview Effect. Indeed, flying in an aircraft can provide enough distance from the Earth’s surface to appreciate the scales involved to alter our experiential sense [4]. However, throughout the book, White insists that distance from the planet’s surface is essential in order to fully grasp the philosophical implications of the Overview Effect.

White’s powerful text and the accompanying interviews with astronauts show how the perspective of space flight offers a way of understanding Earth as an entire system and, in many ways, imparts a sense of “place” to the spaces and subjects involved. This essay and the artwork documented within it explore the potential for what I would describe as an experience complementary to the Overview Effect: an Underview Effect. This experience is gained on the planet’s surface. However, retaining a sense of place on the planet surface is not as easy as it may

## ABSTRACT

The author explores the potential for locative media to offer a sense of a place. Frank White’s “Overview Effect” is cited as a model for perceiving a sense of place in a global context. The paper describes the inherent limitations of Cartesian representations of space in supporting this perception. Finally, the author proposes that the capacity of locative media to connect people offers a path for a creative reconciliation between space and time. The author proposes that this kind of connected model may provide an “Underview Effect” and foster an appreciation of a global sense of place.

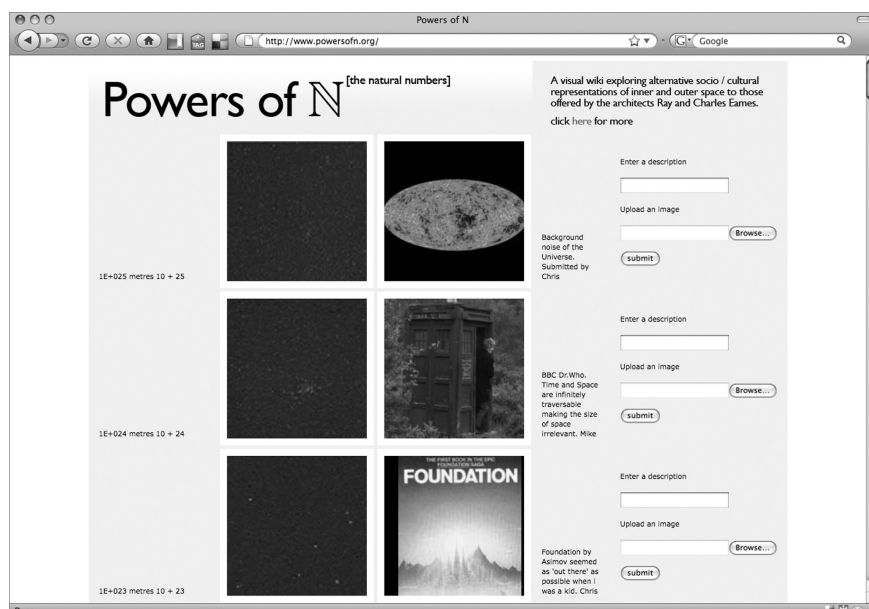


Fig. 1. Chris Speed, *Powers of N*, image wiki. (© Chris Speed) <www.powersofn.org>

seem. The technology that was invented to support terrestrial and extra-terrestrial navigation of space relies heavily upon the avoidance of a sense of place and has concentrated upon a split model of space and time in order to develop maps and timepieces to accurately describe “where” and “when” we are. Used to tremendous effect throughout the course of modernity, space and time have thus come to seem to be separate currencies and, as such, are often manipulated to support social, technical and economic projects. These range from the development of tower blocks to the manufacture of the motor car. While this split remains in many design and production cycles, locative media may offer a context for reconciliation and an opportunity to recover

a sense of place. As mobile technology continues to bring together telephone, networked computing and GPS, time and space are becoming increasingly connected.

This paper explores the delicate constitution of a sense of place and the difficulties faced in overcoming the traditional representations of space in order to offer a ground-based version of White’s Overview Effect, one that is activated through the use of locative media.

## TECHNOLOGY AND PLACE

In locating my own work that deals with people and place, I have found myself absorbing multiple models to describe my experience of the world. Our sense

of place is constituted through a complex mix of perceiving our body’s relationship with architectures, horizons, artifacts and people. Place is not something that we can just point at nor that we can describe only by drawing or taking a photograph; its complexity is something that continues to challenge representational media. However, with the development of the map and the marine chronometer that allowed seafarers to navigate places safely, space was split from our sense of time, making it very difficult for any future technology based on these systems to convey any actual sense of place—any sense of “here” or “there” [5].

Heidegger uses the shift in meaning of the word *dwelling* to help describe the loss of a sense of “place” [6]. Prior to the Enlightenment, *dwelling* could be understood as having more than just a functional imperative. In addition, it was closely linked with worship and expressions of power, as though an attachment to a place was connected with the religious and political structures to which its subjects should be subservient. The embrace of technologies and the movement to modernism “free[d] people from the limitation imposed on them by family or clan or by their village community, offering them unheard-of options and often material improvements as well” [7].

From this process, there ensued a loss of particular certainties, such as the sense of “being” that Heidegger sees as being intrinsically tied to the concept of “dwelling.” Through the mapping and subsequent commodification of place, Heidegger suggests that the Enlightenment separated us from an intrinsic connection to land and, as a result, we lost our sense of dwelling and place [8]. Digital systems have proceeded to capitalize upon the use of the split system to an increasingly extreme extent, which at its peak posited the idea of virtual realities; spaces that promised an extreme lack of place and embraced a form of homelessness [9].

While the promise of a cyberspace has materialized in the many popular instances of virtual worlds (gaming, Second Life), one of the biggest successes of digital media has emerged in the form of social networking systems that have concentrated more on communication and less on representations of space. Without the need for the senses to be saturated by 3D graphic and audio virtual environment, social networking applications rely upon lightweight forms of communication and recently have moved seamlessly to mobile phones. Many people now sustain relationships as they travel

Fig. 2. Linear paths used in automobile and mobile satellite navigation systems. (Photo © Chris Speed) The first generation of smart phones have inherited the same “mapping” technology as used in cars, despite their social-networking properties.





on the bus, in a car or simply walking in the street as these virtual worlds are built upon social connections and not graphic polygons. As mobile phones have become more powerful, they have adopted locative properties to help us to also navigate the street. Initially following the format of satellite navigation in cars, GPS-enabled smart phones came to help us move from one place to the next with the use of on-line maps. Further services that “mash up” application programming interfaces (APIs) are also beginning to provide methods of correlating social and spatial information by accessing locative data from our friends and the places that we like to visit.

However, the legacy of the split model of time and space remains highly prevalent in the form of maps. If locative media is to help us recover a sense of place, it needs to be sensitive to how media represents the world around us. After all, the Overview Effect is not the cause of a representational experience—it is the result of an extraordinarily transparent situation, one in which our understanding of near place, far place, personal place and social place become entwined [10].

## REPRESENTING SPACE AND PLACE

We can better understand the problems that we have in recovering a sense of place if we more fully understand how representations of space (maps, charts and diagrams) can distort a sense of where we are. Lefebvre’s writings aid in this exercise. He establishes a complex and inter-relational framework for experience, in which the production of space is constituted from the complexity of representational forms through which we inherited a split model for time and space. After attempting to establish that there is a Cartesian complicity within modern language to describe place, Lefebvre offers an open model that allows us to apply emphasis on particular issues (such as time, space, body) that are found in many writings on space, but never to separate them from one another. Lefebvre offers a complex, highly contingent threefold dialectic that allows him to locate and extend spatial experiences as *spatial practices*, *representations of space* and *spaces of representation*.

Lefebvre’s first concept, *spatial practices*, incorporates an appreciation of how environments are complicit in the apparent “routines” performed by shoppers, tourists and skateboarders, for example, and how places are constituted by these activities. The second, *representations of space*, are described by Rob

Shields as the abstract “codes, theories, and . . . conceptual depictions of space linked to production relations” [11] and can be understood to be the detached by-products of the machinations of both industry and academia. These machinations include maps, plans, coordinates, diagrams and any abstractly quantitative and artificial interpretation of space. In using such abstraction, it is extremely hard to identify a sense of place, particularly if we consider how different the Mercator projection of the world on a paper map is, compared to an astronaut’s view of the Earth that may have induced the Overview Effect.

The last component in Lefebvre’s three-part dialectic is *spaces of representation*, which offer a framework for understanding our dynamic relationship with space, and the constant tension between spatial production and perception. Any model we have for a place is based upon a relational dynamic among social, physical, intimate, economic and cultural attributes [12]. These dynamics are constituted by the language of spaces, the images and symbols that construct and persuade us of different values, narratives and systems for operating within a space. Shields describes the consumption of dislocated symbolic notions as a catalyst for an “alternative cosmology” [13], within which the users can “play” and distance themselves from the abstract powers and machinations of ordinary life.

In many ways, outer space can be understood to have taken upon many

qualities of a “space of representation.” While we may understand that the Earth is orbiting the Sun and that outer space is ultimately in every direction—above us, to the side of us and below us—we are also bombarded with a wealth of science fiction and media imagery that occupies the same space of representation. In an increasingly urban society in which many people live in cities, light pollution obscures many opportunities to “see” the solar system, and many more nights are spent constructing an epistemology for the world through television, rather than lying on our backs staring at the stars. Earth as a “place” in outer space may for many remain a conceptual hypothesis in which the value of the Overview Effect remains obscured by the saturation of “representations of space” that describe outer space in fiction or diffused cultural languages [14].

To elaborate this idea further I have constructed the image wiki *Powers of N* [15]. It offers an opportunity for people to provide alternative “cultural” representations for each of the “Powers of Ten” developed by the Eames Office in 1977 (Fig. 1). For example,  $10^{+21}$  could approximate the scale of a space-travel scene from “Star Trek,” with  $10^{-5}$  representative of the height at which the space shuttle *Challenger* blew up in 1986, and  $10^{-7}$  more commonly represented by a certain L’Oréal commercial’s description of what its product does to your hair at a microscopic level—“the science bit” as Jennifer Aniston puts it. The *Powers of N* web site and project remind us of how

**Fig. 3. Chris Lowry, Dermot McMeel, Chris Speed and Mark Wright, linear paths, 2008.** (© Chris Lowry, Dermot McMeel, Chris Speed and Mark Wright) An image of how the original GPS data revealed the time lines of our students across a base map of Dundee. This form of representation does not afford any connections between social groups.



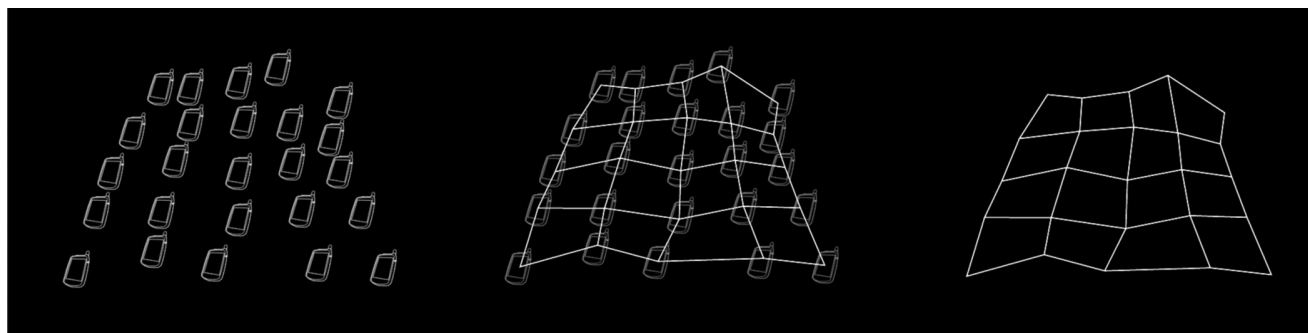


Fig. 4. An illustration of the principle of collaborative mapping across distributed mobile phones that is implemented in the iPhone software Comob Net, 2008. (© Chris Speed)

media imagery can obscure our sense of Earth and its place in the universe, and how many other “representations of space” compete with actual images from the Hubble telescope and other such sources from outer space.

As the maps and abstract representations of space that underpin how locative media mix with spaces of representation from cinema and scientific instruments, consumers are faced with a hazy overview of Planet Earth. If locative media has the potential to offer a complementary perspective to that of seeing the Earth from space, then it has to be sensitive in the way that it adopts Cartesian and abstract ways of describing a sense of place.

### RECOVERING AN OVERVIEW EFFECT

The in-car satellite navigation systems of the early 2000s were firmly located at the Cartesian end of the continuum of spatial systems. These representations of the landscapes on the dashboard describe the network of roads and are comparable with how a road atlas describes the landscape. The in-car satellite navigation systems are able to plot tourist sites and places of social interest—bars, restaurants, museums, cafes, etc.—but the primary navigation tool is a map and our understanding of our location within it. As network data increasingly provides “real-time” attributes to maps (including traffic activity and weather data) we will gain a richer idea of what’s going on “out there,” but, for the moment, the navigation embedded in the green line that directs the driver to a specific destination is deeply linear and has little to do with a sense of place. What is more concerning is the transference of this approach from the car, where we are predominantly traveling forward, to the pedestrian, who may change direction at any moment (Fig. 2).

The first generation of mobile phones to have GPS embedded within them have also inherited the same mapping technology as the in-car devices; consequently any aspirations for a non-abstracted sense of place are hampered by the language of the map, in which time becomes an arrow across a flat territory. To understand how place is constructed without a map or plan, we can refer to Latour’s Actor-Network Theory and in particular how he prioritizes social networks over both material and abstract interpretations of space. Latour’s theory is placed within a sensitive model of place and reminds us that the fabric of society is not in the plans or the walls. Rather it is the passage of relations across the networks that constitute their organization:

Society is not the whole “in which” everything is embedded, but what travels “through” everything, calibrating connections and offering every entity it reaches some possibility of commensurability. We should now learn to “hook up” social channels like we do cable for our televisions. Society does not cover the whole any more than the World Wide Web is really worldwide [16].

Latour’s call to hook up social channels can be interpreted as a desire to see the extension of a communications substrate across which social networks can further grow. However, more specific to a critique of the Cartesian representations of space, Latour presses home that any attempts to gain a higher ground upon a place are futile for understanding the hierarchies and scales of a location.

Macro no longer describes a wider or a larger site in which the micro would be embedded like some Russian Matryoshka doll, but another equally local, equally micro place, which is connected to many others through some medium transporting specific types of traces. No place can be said to be bigger than any other place, but some can be said to benefit from far safer connections with many more places than others [17].

Latour’s emphasis on social connections to inform our sense of place highlights one of the most powerful aspects of contemporary smart phones—the ability to connect to others. As locative media promises more layers to our experience of a place, we can anticipate the networking of each of our personal models of that place. As we use our phones to answer calls, text people, search the Web, update our Facebook status, find ourselves as a GPS point on a Google map, use search engines to find local services, and post photos of what we see, our model of times and spaces takes on a soft, relational model, in which we anticipate multiple readings. How can these socio-geographical attributes be brought together in locative media that informs a sense of place? Can locative media construct a sense of place that provides a wider awareness of social and geographical context—an Underview Effect?

### A METHODOLOGY FOR SUPPORTING A SENSE OF PLACE IN LOCATIVE MEDIA: AN UNDERVIEW EFFECT

The desolate physiognomy of wilderness is doubtless felt most poignantly in circumstances of isolation. Indeed, a vicious circle of isolation and desolation may ensue. The more I feel myself to be isolated (not only geographically but also socially, culturally, linguistically, etc.), the more I tend to find my surrounding desolate, the more I feel isolated in various ways. If I am displaced at the same time—as is often the case—any escape from this circle of the desolated-isolated self will be only that much more difficult to achieve, leaving the entrapped self discouraged and disconsolate [18].

In this quote Casey describes a sense of isolation that is a direct result of displacement: the loss of place. His perspective is informed through a close analysis of personal and cultural experiences as well as



a theoretical exploration of why place has been neglected by philosophers. Highly critical of modernity's use of space and time as discrete units to quantify experience and exploit resources, Casey understands place as a better means of locating the body in the wider context of space [19]. The Overview Effect experienced by astronauts is potentially a very specific sense of place that is evidently a synthesis of geographical, social and physiological phenomena in a context that at times might be considered extremely isolated—a spacecraft. At the other extreme end of a social spectrum is the mobile smart phone, which is designed to keep us in touch with friends through constant messages, feeds and status updates from our network of friends. Now coupled with an awareness of space, locative media offers some of the ingredients for supporting a complementary sense of place because it has the potential to bind geographical, social and cultural dimensions.

As a response to this potential, I have established a simple methodological approach to locative media that is different from many instances of how geographical and social data are used. Often GPS data is used as a discrete geographical parameter to identify where one or more people are at any one time. Mapped across time, GPS data is used to reveal the individual trails of users across maps, trails not dissimilar to the linear paths that satellite navigation uses to describe a route from one place to another. Useful for describing individual time-based paths, these projections rely on time and a linear script of activities for each user. Consequently, the devices cannot describe any connection between people. Working with colleagues in two different projects, I decided to swap the discrete “time” parameter with a social one, leaving only people and geography.

One of these recent projects is entitled *Digital Explorations in Architectural Urban Analysis*. Chris Lowry, Dermot McMeel, Mark Wright and I worked with architectural students from Edinburgh College of Art to establish a way of networking mobile GPS devices that would produce maps based on the simultaneous navigation and movement of a large body of people. During a study visit to Dundee, Scotland, 17 students were equipped with GPS devices and asked to explore an area specific to an architectural brief. Upon their return to the studio, the academic team “harvested” all the waypoints and tracks recorded by each GPS. Each track was stripped of its time data, and a new file was constructed that consisted of

over 10,000 geographic points covering the area of “downtown” Dundee. Created using a series of 3D software packages, the final “mesh” describes a social topology of the students’ movements across the city (Color Plate B). Accurate in longitude and latitude but flawed in elevation due to GPS devices’ difficulty in ascertaining accurate height information, the study demonstrated the potential for collaborative mapping.

This apparent geography is unusual because it is the result of a social process. It is a landscape collected through the movement of groups of people working together to explore a specific place. In many ways, the topology describes knowledge of that place because it documents their movement across, around, over and through it. Traditional use of the same data depicted the lines of each of the 17 GPS devices over time and would have required a base map of Dundee for a user to understand the geography (Fig. 3).

We are currently working on a live mapping version of the process, which allows each user in the street to receive a real-time description of his or her place as a node within a mesh of other users. The application of this approach allows users to generate a reasonably accurate topological map of a place quickly—a map that also describes aspects of the social characteristics of a place (Fig. 4). Using this novel approach to correlating a social network with geographical data, individuals become a part of a col-

lective perspective for an environment and are able to understand their places within it.

In parallel with the socio/topological mapping, a second project was initiated. Jen Southern and I developed a prototype for a live platform that is situated in the street and supports networked collaborative mediation. In contrast to representing the relationship between participants as a grid or mesh, *Comob Net* draws a single line between users so that, for example, a group of five users can draw around objects of interest that the group finds in a place. Members of a community are brought together and asked to demarcate areas of specific interest: ecological concern, traffic congestion and crime (Fig. 5). By working together to negotiate the boundaries that surround an agreed upon problem, the collaborative GPS platform supports a situated discourse through which people learn about each other's relationship with a place. Although our research is still at an early stage, what is critically different is that the participants use GPS technology not to locate themselves in an abstract, unpopulated map but to identify their relationship with other members of the group.

## SUMMARY

Recalling Lefebvre's problems with abstract representations of space, we may consider that through collaborative GPS

**Fig. 5. Jen Southern and Chris Speed, Comob collaborative GPS drawing, 2008.**  
(© Jen Southern and Chris Speed) The image on the left depicts users working together to demarcate areas of a place. The image on the right demonstrates how the same technology could be used for groups to identify themselves as part of an international network.



projects the markings on a base map become less significant, as we no longer place ourselves at a point along a linear line toward a destination but instead within a mesh whose form is contingent upon the movement of others. This triangulation between environment, people and self offers a framework within which social and spatial dimensions remain in tension and the Cartesian base map only becomes useful to recall and locate the negotiation around the physical, environmental forms that were part of the conversation.

In many ways both *Powers of N* and *Comob Net* follow the simple method of swapping the dimension of time for the dimension of people. Avoiding the use of time in discrete units, which is traditionally used to isolate an individual from others and a landscape, offers locative media an opportunity to capitalize on its primary strength: supporting social networks. While time is not apparent as a separate variable, it becomes implicit within the experience of the groups who share their exploration of a place. The synthesis of people within a temporal/geographical network also diminishes the representational power of the base map as individuals concentrate upon the lines that connect them to each other, rather than worrying about the spaces between the buildings and streets that isolate them from one another. This “Underview Effect” does not rely upon a linear hierarchy between the ground and outer space, but sustains a meaning of place because it uses the strongest bonds

that people on the ground have in order to locate themselves—each other.

Frank White’s Overview Effect, and the stories from astronauts who have orbited the Earth, remain as a point of singularity in which the elements of Casey’s recipe for a geographical, social and physiological sense of place come together to provide a life-changing experience. While the rest of us can hope to experience such an epiphany on a future domestic flight into space, locative media may hold some potential in providing us with a heightened sense of place that connects us to people and the environment around us. At the right pitch of people and geography, our connection to this network may offer us an awareness of place that is big enough to evoke a sense of being on a planet. In interpreting and communicating Rusty Schweickart’s space flight experiences, White writes:

I saw humanity as an organism and grasped the reality of his [Schweickart’s] experience as the “eye” of humanity. I felt that, in writing it down, I was like a “neuron” firing, sending the message down the line to others [20].

## References and Notes

*Unedited references as provided by author.*

1. Frank White, *The Overview Effect* (Boston: Houghton Mifflin Company, 1987) p. 38. White’s book is often used as a critical text that offers a philosophical framework to support the exploration of space. Accompanying the substantial essay are interviews with astronauts from Gagarin to Shepard that demonstrate their awe in seeing Earth from space.
2. White [1] p. 36.
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12. Henri Lefebvre, *The Production of Space* (Oxford: Blackwell, 1991) p. 47.
13. Shields [11] p. 55.
14. White [1] p. 21.
15. Chris Speed, Powers of N [online] Available at: <www.powersofn.org>. [Accessed March 2009]
16. Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005) p. 242.
17. Latour [16] p. 176.
18. Casey [5] p. 197.
19. Casey [5] p. 105.
20. White [1] p. 37.

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